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PECULIARITIES OF QUALITY OF LIFE AMONG PATIENTS WITH OSTEOARTHRITIS AFTER ARTHROPLASTY

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Abstract

Osteoarthritis causes many negative effects, which reduce the quality of life. Patients complain of persistent pain, functional impairment, restricted ability to move, and depression based on their personal beliefs about health, which are the basis of their psychological problems. In the process of rehabilitation after arthroplasty of large joints, patients' quality of life is assessed by using the SF-36 questionnaire, and anxiety and depression are measured by the Hospital Anxiety and Depression (HADS) scale. Acquired findings indicate high values on the scales of anxiety (borderline abnormal level was diagnosed in 22 patients (54.1%), abnormal level in 8 patients (16.6%) in the sample N=48) and depression (borderline abnormal level was diagnosed in 21 patients (43.8%), abnormal level in 19 patients (39.6%) in the sample N=48). The results of the research revealed negative correlations ($p \leq 0.05$) between anxiety and general health, pain, and general and mental health ($p \leq 0.01$). These findings allow us to determine the targets of psychological interventions during rehabilitation.

Keywords: Depression, osteoarthritis, pain, quality of life, quality of life after arthroplasty

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1. Introduction

In the current conditions, health becomes a subject of close attention of doctors, psychologists, and other specialists involved in assisting, as well as public authorities. Taking into consideration the biopsychosocial model, we emphasize the relationship between psychological (emotional), psychopathological (anxiety and depression), and physical (pain) factors after arthroplasty with osteoarthritis ensures adaptation to the conditions of the disease and the conditions in which it takes place.

Deterioration of health is one of the social problems of modern society. The health of the population is one of the main indicators of the quality of life. One of the key areas of research on the quality of life is the problem of health (Vasilyeva et al., 2010). The research on the quality of life becomes relevant in the modern world because it allows evaluating the impact of the disorder on the patient's general condition within the framework of the biopsychosocial model. Quality of life is considered as an integral characteristic of the physical, psychological, social, and emotional state of patients, which is assessed based on their subjective perception. Studies conducted in the regions of Russia have demonstrated that in large cities the health rating is higher than in rural areas (the value of health takes the first place in the system of values of the urban population) (Tatarkin & Kuklin, 2009).

Quality of life (QL) is a concept increasingly used in the assessment of health conditions of a given population (diet habits, housing, employment, recreation, etc.) and of the impact of therapeutic applications associated with different groups of diseases (Barbosa et al., 2015). Quality of life is a concept that is used to assess the health status of population groups (nutrition, social functioning, employment, etc.) (Pokrovsky, 1996).

According to and experts of the World Health Organization, the study of quality of life is especially important in chronic diseases that require long-term treatment (Carr, 1999).

2. Problem Statement

At present, osteoarthritis includes a group of diseases of different etiology, having similar biological, morphological, and clinical outcomes, in which the joint is involved in the pathological process.

According to health statistics, 20% of the world's population suffers from osteoarthritis, in Russia it is17. 3% of all residents of Russia (Lanskaya et al., 2018) among the urban population indicator - 6.43%, among the rural population - from 22.6% to 43% (Benevolenskaya, 1988). The social significance lies in the disability and deterioration of the quality of life of patients with arthrosis after endoprosthesis (Bagirova, 2008).

The main clinical symptoms of osteoarthritis are pain and joint deformity that leads to functional insufficiency. Osteoarthritis, arthrosis, and deforming arthrosisare listed as synonyms in the ICD-10 (ICD-10, 2003).

Osteoarthritis is a degenerative-dystrophic disease of the joints, which is caused by damage to the cartilage of the articular surfaces (Pokrovsky, 1996). Osteoarthritis is diagnosed in 7% of the population; in Russia, this percentage is slightly lower; symptomatic (accompanied by clinical symptoms) osteoarthritis was detected in 6.43% of the surveyed individuals (Novik & Ionova, 2007).

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Osteoarthritis is the most common form of joint damage and the main cause of disability and the consequent decline in the quality of life. The incidence of osteoarthritis increases with age, up to 1/3 of the elderly population. Men of young age and women of old age are predominant among patients with osteoarthritis (30% at the age of 45-64 and 63-85% of those who are over 65 years old).

Osteoarthritis reduces the quality of life to a greater extent than in patients with respiratory and cardiovascular diseases. Osteoarthritis is one of the pathological conditions that cause the most prolonged decline in all health indicators along with hypertension, diabetes and depression. Osteoarthritis is one of the most common causes of joint replacement and the second most common cause of persistent premature disability (Kovalenko & Bortkevich, 2003).

The main goal of modern osteoarthritis treatment is to reduce the impact of the disease on patients' lives by improving their quality of life and reducing their disability.

In our research, we used a model that combines key factors. In this model, pain and depression are seen as results of osteoarthritis. Depression can be caused by other factors besides the factors of the disease.

Depression, which is often associated with extreme fatigue, is a common problem for a large percentage of patients with osteoarthritis (92%). Symptoms of depression are usually found in 25% of cases. Many patients also have a high level of anxiety. Studies have proven that depression is connected with declining health, and high levels of pain decrease the quality of life (95%) (Amirdzhanova et al., 2008). Patients who are diagnosed with osteoarthritis have significant declines on all scales as a result of pain and impaired physical functions.

Symptoms of osteoarthritis affect the daily activities of the patient, as well as have an emotional, physical and social impact on him (Hemalatha et al., 2017). The prevalence of anxiety symptoms exceeded the symptoms of depression in patients with osteoarthritis (Guglielmo et al., 2018). Those reporting depressive symptoms had a higher prevalence of worse health (Jetha et al., 2021**).**

3. Research Questions

Assessment of the health-related quality of life in patients with arthrosis after endoprosthesis. What are the features of the quality of life associated with health in patients with arthrosis after endoprosthesis?

4. Purpose of the Study

In this study, attention is focused on assessing the quality of life associated with health in patients with arthrosis after endoprosthesis. The aim of the study is to identify the features of the quality of life in patients undergoing rehabilitation after endoprosthetics, as well as to interpret the results obtained.

5. Research Methods

48 patients who were undergoing rehabilitation after arthroplasty took part in our research.

According to the severity of the violation of the function of the musculoskeletal system, the first place is occupied by osteoarthritis. Both general and specific questionnaires are used to assess the QOL of

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patients with osteoarthritis. The most commonly used general questionnaire is SF-36 (Short Form Medical Outcomes Study). In clinical studies following arthroplasty, the Short Form Medical Outcomes Study (SF-36) questionnaire is used to assess the quality of life during the rehabilitation of patients (Ware et al., 2000). According to the severity of musculoskeletal system dysfunction, osteoarthritis is in the first place.

All study participants underwent rehabilitation after arthroplasty of large joints. Informed consent was obtained from all participants. The study took place during a psychological counseling session with patients. The participants' quality of life was assessed using the SF-36 Questionnaire, anxiety and depression were measured using the HADS scale. The SF-36 Questionnaire consists of 36 questions, which are grouped into 8 scales. There are 4 scales that describe the physical component of health: physical functioning (PF); physical role functioning (RP); bodily pain (BP); general health (GH). The other 4 scales describe the psychological component of respondents' health: vitality (VT); social role functioning (SF); emotional role functioning (RE); mental health (MH). Scale scores range from 0 to 100 points: 100 points correspond to the most well-being, and 0 points to the maximum limitations in life activities on the corresponding scale (Amirdzhanova et al., 2008; Novik & Ivanova, 2007; Ware et al., 2000).

6. Findings

The research involved 48 people who were undergoing rehabilitation after arthroplasty, 71% of whom were women and 29% men. The majority (67%) had a university degree, and 73% did not work (57% were retired, 16% had family responsibilities). Most of the participants were married (79%). Their age ranged from 50 to 80 years, with an average of 64.7 (standard deviation ±7.6) years. The weight of respondents ranged from 43 to 94 kg, with an average of 77.19 (standard deviation ± 13.3). As for the medication intake, 77% of the participants took their medications on a daily basis. The majority of patients (99%) used pain-relieving ointments and gels. Factors that affect the quality of life are presented in Table 1.

Table 1. Results of descriptive statistics

height		161.1 ± 6.08
age		77,1 ± 13,3
gender	male	13 (27%)
	female	35 (73%)
education	secondary education	32 (66.6%)
	higher education	13 (33,4%)
HADS anxiety	normal	18 (37.5 %)
	borderline abnormal	22 (54.1%)
	abnormal	8 (16.6%)
HADS depression	normal	8(16.6%)
	borderline abnormal	21 (43.8%)
	abnormal	19 (39.6%)
Quality of life SF-36	physical functioning	20.68 ±2.9
	role functioning	51 ± 1.15

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bodily pain	30.6 ± 1.93
general health	24.68± 2.45
vitality	13.64 ± 2.31
social functioning	61.6±1.6
emotional functioning	52.2±2.59
psychological health	20.18±2.59
physical component of health	47.60±3.09
psychological component of health	45.22±3.98

According to (Amirdzhanova et al., 2008) the quality of life of both men and women aged 75 and older is in the range of min-max, with mean value on the following scales: PF – 19-57 (43.25), RP– 37-61 (37.30) BP – 27-65 (46.08), GH – 21-63 (46.61), VT – 27-64 (49.93), SF – 20-63 (52.27), RE – 36-60 (52.25), MN – 23-67 (54.60). But the data from respondents of this age range show lower mean values for the scales PF – 20.68, GH – 24.68, VT – 13.64, MN – 20.18, and higher value for the scales RP – 51, SF – 61.6. Mean values on the scales BP – 30.6 and RE – 52.2 correspond with population scores. Correlation of quality of life with indicators of anxiety and depression are presented in Table 2.

Table 2. Correlation of quality of life with indicators of anxiety and depression

Correlations												
			Anxiety	Depression	RF	RP	BP	GH	GH	SF	RE	MH
Spearman's po	Anxiety	Correlation coefficient	1.000	-.099	-.010	-.229	.246	-,363*	.008	-.075	-.156	-.169
		Sig. (2-tailed)		.503	.945	.118	.092	.011	.958	.612	.289	.249
	pain	Correlation coefficient	.246	.026	-.222	-.005	1.0	-.323*	-.022	.059	.134	-.457**
		Sig. (2-tailed)	.092	.863	.129	.974		.025	.880	.691	.365	.001

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Statistical analysis was performed using SPSS. The sample was predominantly female (73%), with an average age of 77.1 years (43-95). The majority (53.3%) had been diagnosed with osteoarthritis for more than five years.

In general, these results indicate low physical functioning, pain, low levels of vitality, and general health. In the same way, both depression and anxiety scored high.

The results of the research revealed negative correlations ($p \leq 0.05$) between anxiety and general health, pain, and general and mental health ($p \leq 0.01$). Pain as an indicator of osteoarthritis is the most significant factor in the decline of general health. According to the biopsychosocial model, health consists of physical and psychological components. This may explain why the increase in anxiety decreases general health and increases the intensity of pain after arthroplasty.

7. Conclusion

Research findings confirm that the average quality of life scores of the population had higher values compared to those of individuals with osteoarthritis after arthroplasty. Low values demonstrate

that respondents have reduced general health, physical activity (walking, self-care) is severely limited by their health, fatigue is present, there is a decrease in vitality, and there are depressive, anxious states, as well as mental ill-being.

High scores on the scale of physical role functioning, as perceived by patients, indicate that health problems limit their daily activities. At the same time, patients report satisfaction with their level of social activity (communication, socializing with family, and friends).

The results of the research are of great significance for the rehabilitation of patients with osteoarthritis after arthroplasty. Psychological intervention should be focused on reducing anxiety and depression, which will subsequently increase the quality of life.

Therefore, this research supports the idea that the condition of patients after arthroplastyshould be studied in terms of a biopsychosocial approach. With this approach to understanding the condition of patients, the physical aspect of the disease may dominate, which may be influenced by psychological factors that need to be addressed in psychological interventions. As a result, it may be possible to achieve better health outcomes for patients with osteoarthritis after arthroplasty.

All post-arthroplasty patients may benefit from systematic mental health screening and participation in evidence-based interventions, such as self-control training programs, whose proven benefits include reducing pain and improving mental health (Price et al., 2017). Self-control training and physical activity programs have been proven to improve function and quality of life (Theis et al., 2019). The national program for osteoarthritis is considering expanding Wellness programs in the workplace, contributing to the formation of a healthy culture (CDC, 2021).

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